

**Vermont Department of Health
Public Health Laboratory**

Breath and Blood Alcohol Analysis

A. Scope and Authority

In accordance with 23 V.S.A. Section 1203, the following are stated as requirements for performing and reporting results of breath and blood alcohol analyses.

B. Definitions

I. As used in this rule

1. "Alcohol" refers specifically to ethyl alcohol.
2. "Analysis" refers to the physical identification and quantification of alcohol within breath or blood samples.
3. "Method" refers to an analytical technique for performing chemical analyses. A method may require specific analytical instrumentation.
4. "Procedure" refers to the series of steps followed in the performance of analyses.

II. Severability

If any provision of any section of this rule or the application thereof to any firm, individual or circumstance is found by a court of competent jurisdiction to be illegal, invalid or void, the remainder of this rule shall be deemed unaffected and shall continue in full force and effect.

C. Methods for Alcohol Analysis

I. Breath Alcohol Analysis

Analyses shall be performed using the methods of gas chromatography or infrared spectrophotometry. In using either method the following specifications must be met:

1. Sampling equipment shall be capable of collecting a sample of expired alveolar air. When such sample is collected using a crimper device, it shall be stable for at least sixty (60) days and shall be of sufficient quantity as to make available a portion for independent analysis.

2. Analytical instrumentation shall be capable of analyzing replicate samples of breath containing a known amount of alcohol with a precision of plus or minus 5% from their mean when alcohol concentrations are reported to three significant figures.
3. Analytical instrumentation shall be capable of determining the blood or breath alcohol concentration of the person sampled with an accuracy of plus or minus 10%. The calculation of an equivalent blood alcohol concentration from the result of a breath alcohol analysis shall be based on a blood to breath alcohol concentration ratio of 2100:1.
4. Instrumentation shall be capable of determining the breath alcohol concentration of the person sampled within plus or minus 10% where the concentration is expressed as weight percent alcohol per 210 liters of expired air.
5. The analytical instrumentation shall be capable of detecting the presence of potentially interfering compounds which may be present in breath and which may otherwise interfere with accurate determination of an equivalent blood or breath alcohol concentration.
6. The analytical instrumentation and procedures used for analysis of breath alcohol content for evidentiary purposes shall be approved by the Commissioner of Health.

II. Blood Alcohol Analysis

Analyses shall be performed using the method of gas chromatography. The following specifications must be met:

1. Samples shall be submitted in such a way as to provide two containers containing at least 5 ml of blood each. The sample containers shall include a suitable preservative which will not interfere with analysis of alcohol and which will render the alcohol concentration of the sample stable for at least sixty (60) days. The sample container shall provide a means to ensure sample security and shall be acceptable to the Vermont Department of Health Laboratory Director.
2. Analytical instrumentation shall be capable of analyzing duplicate portions of a blood sample with a precision of plus or minus 5% from their mean when alcohol concentrations are reported to three significant figures.
3. The instrumentation shall be capable of determining the alcohol concentration of a reference sample of known concentration with an accuracy of plus or minus 10%.

4. Analytical instrumentation and analytical procedures shall be approved by the Commissioner of Health and shall be capable of detecting the presence of potentially interfering compounds which may be present in blood and which may otherwise interfere with accurate determination of blood alcohol concentration.

III. Preliminary Alcohol Screening

Any preliminary alcohol screening device used by law enforcement officers in enforcing the provisions of Title 23 of the Vermont Statutes Annotated must conform to the National Highway Traffic Safety Administration (NHTSA) Model Specifications for Evidential Breath Testing Devices. The latest specifications appear at 58 Federal Register 48705-48710. The device used must be on the NHTSA Conforming Products List for instruments that meet such model specifications. The latest list appears at 61 Federal Register 3078-3081. All such instruments must be operated, maintained, and used in accordance with manufacturer specifications and instructions.

D. Collection and Security of Samples

I. Evidentiary samples

1. Upon collection, shipping containers used for the submission of evidentiary samples of breath or blood must be sealed and properly identified with, at minimum, the name of the tested subject and the date and time of collection. All seals shall be tamper-resistant. Samples shall be sent or delivered to the Vermont Department of Health Laboratory in a sealed condition, where, upon receipt, they shall be held in a limited access, secured storage area. Samples shall remain sealed until such time that they are opened by an analyst.
2. When in the custody of law enforcement personnel, all samples shall be kept in a secure area, until such time as they are sent or delivered to the Vermont Department of Health Laboratory.

II. Samples for Independent Analysis

1. Collection of blood samples for independent analyses require the use of kits provided by the Department of Health or use of kits appropriate for blood glucose analysis. These samples must be sent to the Department of Health Laboratory for storage until independent analysis is requested or the required storage time has been exceeded, unless they are to be analyzed at the facility in which they are drawn.

2. All samples for independent analysis shall be securely held by the Vermont Department of Health Laboratory. The Vermont Department of Health Laboratory, upon receipt of a written request from the tested subject or his/her attorney and payment of the handling fee, will send the requesting subject's sample to the independent laboratory of his/her choosing. The sample will be sent to the independent laboratory in a sealed condition.